Existing Conditions Report

Friday Harbor Ferry Terminal

Mast Plan Update

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1 INTRODUCTION

1.1 BACKGROUND

This project is funded by the 2005 legislative 9.5-cent gas tax increase. As listed as an element of the 2006 Legislative Evaluation and Accountability Program (LEAP), the proviso accompanying the $250,000 budget item for this work states:

> *This project funds a master planning effort at the Friday Harbor Ferry Terminal. The City of Friday Harbor previously (1998) commissioned their own study of their vision for the Friday Harbor waterfront. Washington State Ferries (WSF) wants to determine whether this report is compatible with WSF's long-term goals for the terminal, including circulation improvements, terminal expansion, and revenue-generating opportunities.*

The 1998 study is titled *Five Year Waterfront Intermodal Transportation Study Recommendations* and contains a memorandum of understanding between the participating parties by which the document would serve as the "groundwork for future collaborative efforts in the development of facilities, amenities, and systems which address the accommodation of ferries, pedestrians, and vehicles in the town of Friday Harbor and along the Friday Harbor waterfront." Further, the participating parties agreed to consider the study in their transportation plans and capital improvement budgets and to periodically review the premises of the study, as well as to work together to modify the study as needs and opportunities developed over time. Finally, the memorandum noted that there were still a number of issues to be resolved among the agencies in order to better integrate the recommendations.

This LEAP project is intended to build on and complement the 1998 study recommendations.

WSF acknowledges the need for the Intermodal Transportation Committee's (ITC) continued participation in revisiting the earlier study. Between October 2005 and present, four ITC meetings have been held to discuss shared goals and objectives, to identify possible causes for long dwell time[1], and to identify potential solutions for reduced dwell time. Although these topics were discussed and to some degree analyzed in the 1998 study, conditions have changed since that time so a review of current circumstances was seen as necessary. (For example, some of the improvements recommended in the 1998 study have already been implemented. Also, assumptions in the 1998 plan, such as projections for growth in ridership, have changed.)

In their March 1, 2006 working meeting, ITC members suggested adding clarity by modifying the master-planning objective to state the following:

> *Complete a study that provides recommendations for reducing dwell times and improving service in Friday Harbor so that future service improvements may be considered.*

[1] "Dwell time" is defined as the elapsed time between a ferries arrival at a terminal and its departure.

Currently vessel dwell time at the Friday Harbor Terminal can exceed 60 minutes during the peak season. According to WSF's Planning Office, in order to accommodate future growth, the vessel dwell time must be reduced to a maximum 25 to 30 minutes during the peak summer schedule.

ITC members believe that separating pedestrian traffic from vehicular traffic will solve at least part of the problem. However, prior to exploring options for accomplishing this, the group wants a definitive answer to the question "Will separating vehicles and pedestrians significantly reduce dwell time?" to ensure such an effort is worthwhile.

The value of separating pedestrian and vehicular traffic will be evaluated along with the most efficient means of accomplishing such an operational change. At its working meeting, the ITC identified several elements they would like to see included in this evaluation:

- Consider a waterfront boardwalk to route pedestrians to Memorial Park and north of the dock, where private ferry passengers are routed.
- Identify possible locations and the feasibility for a "kiss and ride."
- Consider options for rerouting and resigning traffic and establishing a preferred vehicle route through town.
- Explore possibilities for less costly and more visually appealing options besides overhead passenger loading.

In addition to input from ITC members, WSF's project manager coordinated with the agency's long-term planning office to ensure compatibility with long-term plans. The planning office emphasized that this study should specifically look at options that address the following three broad categories:

- Eliminating pedestrian and vehicle conflicts during offloading.
- Improving vehicle off-loading and egress through local street system.
- Improving vehicle on-loading and ingress from holding area.

Addressing these issues will require looking at:

- Off-loading vehicular traffic.
- Loading vehicular traffic.
- Locating pick up and drop off areas (kiss and ride).
- Routing vehicular traffic through town.
- Off-loading pedestrians.
- Loading pedestrians.
- Routing pedestrian traffic through town.
- Two lane loading.
- Remote holding area(s).
- Efficient egress from holding area(s).

2 PREVIOUS STUDIES AND REPORTS

Ferry traffic to and from the Friday Harbor Ferry Terminal has been an issue for study and discussion for several decades. A summary of these studies, their findings, and their recommendations is provided below.

2.1 1996 – 1998 FIVE YEAR WATERFRONT INTERMODAL TRANSPORTATION STUDY

In 1996, a 5-year plan was developed under contract to the Port of Friday Harbor. The goal of the project was to develop a planning document to guide the design of facilities in the project area over the next 10 to 20 years. The recommended improvements were developed by a consultant team with regular input from the Port of Friday Harbor, the Town of Friday Harbor, San Juan County, WSF, and the public, who were represented by a stakeholder team. Direct public input was also solicited during several well-attended open houses.

The project recommendations were presented in two segments: A five-year improvement plan and a long-range plan for development. Each recommendation was assigned to one of the participants in the study as follows:

Washington State Ferries

- WSF1: Purchase and develop adequate vehicle staging areas.
- WSF2: Investigate and define operating parameters of "just in time" loading.
- WSF3: Develop "kiss and ride", public transportation, and parking facility at the existing loading lanes.
- WSF4: Open a second ferry-loading lane.
- WSF5: Construct adequate outdoor passenger routing and staging area to connect the ferry landing to Circle Park.
- WSF6: Surplus unused land.
- WSF7: Work with the Town and County to fund personnel for traffic control.

Port of Friday Harbor

- P1: Work with Town to insure there is adequate access to the marina and adequate traffic flow on Front Street including a turn-around at the end of Front Street and adequate emergency access.
- P2: Work with the Town to develop Front Street to a more pedestrian environment. Rebuild the sidewalk in front of Downriggers and make appropriate pedestrian improvements at Spring Street Landing.
- P3: Schedule no simultaneous unloading of passengers from passenger-only ferries and WSF ferries.
- P4: Limit passenger-only and excursion vessels to 550 feet of combined space at Spring Street Landing Breakwater and the Marina Breakwater.
- P5: Limit passenger pick-up at Spring Street Landing to one twelve-passenger van on Spring Street Landing property (consistent with the August 1996 permit

requirements for Substantial Development Permit) until Intermodal Transportation Plan Improvements are made.

Town of Friday Harbor

- T1: Assist in enlarging Circle Park.
- T2: Sign and re-route traffic on Front Street and East Street.
- T3: Work with the County and WSF to fund personnel for traffic control.
- T4: Create pedestrian "bulbs" at the intersection of Spring Street and First Street to ease pedestrian/vehicular interaction at this intersection.

San Juan County

- C1: Assist the town with the enlargement of Circle Park.
- C2: Work with the Town and WSF to fund personnel for traffic control.

Joint Responsibilities

- J1: Adopt the Long-Term Conceptual Plan as a planning tool.
- J2: Provide a preferred vehicular routing plan.
- J3: Assess the financial impacts to Friday Harbor of intermodal terminal siting within the town.
- J4: Meet every other year to consider and compare actual growth with planning predictions and development actions, reconsider the Long-Term Conceptual Plan, and determine whether additional development is needed.
- J5: Create a Town, County, Port, and WSF committee, consisting of a representative from each group, responsible for inter-agency implementation of the five-year plan. This committee will assist in funding, qualitative design review, and coordination.

The status and estimated cost of each of the recommendations from the 1998 Memorandum of Understanding is shown in Appendix A.

2.2 WSF REPORTS AND PLANS

2.2.1 2006 Draft Long Range Strategic Plan

The 2006 WSF Draft Long Range Strategic Plan (LRSP) calls for increased service to the San Juan Islands and a reconfiguration in route structures in response to predicted increases in demand. The LRSP predicts an increase in overall ridership of up to 70 percent and an increase in vehicle traffic of 40 to 50 percent in the San Juan Islands by 2030.

In the short-term, most of the increased ridership to and from Friday Harbor is expected to be walk-on passengers since there will be only minor increases in vehicle capacity before 2017. In the long-term (post-2017), ferries sailing from Friday Harbor will go either directly to Anacortes or make an inter-island circuit. This will be accomplished by adding a sixth summer season boat and a fifth boat in the spring and fall. Significant reductions in vessel dwell time are necessary to accommodate this increase in vessel traffic. These increases represent the maximum service

possible given the current, single-slip terminals, which must be used in the most optimal way in order to accommodate the projected vessel capacity.

2.2.2 1999 WSF Travel Survey[2]

A travel survey was conducted by WSF in 1999 to determine the origins, destinations, and travel modes for riders throughout the WSF system. For weekday travel between Anacortes and the San Juan Islands, 11.3 percent of riders were walk-ons. Of these, the egress mode from the ferry terminal for 72.5 percent was in a vehicle, which suggests a high demand for "kiss and ride" and/or park-and-ride facilities. This is a significant increase from the 1993 survey results, which showed 58 percent of walk-on passengers departing the terminal via vehicle. For the 1999 survey, data was also collected for Sunday travel but mode shares on Sundays for the San Juan Islands are not discussed in the published report.

2.3 NSCCP Passenger Ferry Opportunities Study

The North Sound Connecting Communities Project (NSCCP), also known as the Farmhouse Gang, conducted a study of the potential for passenger-only ferry service in Northern Puget Sound and the San Juan Islands. This study concluded that there may be adequate demand to support service both to the San Juan Islands and between Bellingham and Everett, Seattle, or Des Moines.

In the winter of 2005-2006, a demonstration passenger-only ferry service was initiated between Bellingham and Friday Harbor, funded by a federal grant to the Whatcom Council of Governments. This service provided two round-trips per day and charged $10 per round-trip or $75 for a 10-ticket commuter book. The total ridership for the pilot service was 3,896 for an average of 44 passengers per day[3]. The Whatcom Council of Governments is studying the results of the demonstration service to determine the feasibility of establishing a permanent service.

2.4 Friday Harbor Intermodal Transportation Committee[4]

The Friday Harbor Intermodal Transportation Committee (ITC) has been meeting since October 2005, as part of the effort to update the Friday Harbor Ferry Terminal Master Plan. At the beginning of the update process, an overview of the 1998 study was presented and additional ideas for improvements have been solicited. A work scope for the current effort was develop in early 2006 and the ITC will continue its involvement through the current update and into implementation of the updated master plan. The new ideas suggested in recent ITC meetings are noted in Appendix B.

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[2] The 1999 WSF Travel Survey is available at http://www.wsdot.wa.gov/ferries/travel_survey/wsf1999ts.htm

[3] Additional information on the NSCCP passenger-only ferry demonstration project is available at http://www.wcog.org/

[4] ITC meeting notes are available from WSF Community Relations and Public Outreach

3 EXISTING CONDITIONS

3.1 LOCAL TRAFFIC

The Town of Friday Harbor's Comprehensive Plan provides a good overview of traffic conditions in Friday Harbor[5] (emphasis added):

> *"Traffic circulation in Friday Harbor is affected by its location as the primary access point to San Juan Island. Through traffic to the rest of the Island passes through the Town. The peak vehicle loads that occur when the ferries unload have the greatest impact on traffic circulation. Excessive queuing of vehicles waiting to board the ferries and the actual boarding process also affects circulation. Conflicts between larger vehicles, pedestrian, bicycle, and moped traffic at uncontrolled intersections contribute substantially to congestion.*
>
> *Traffic congestion in the Town corresponds to the **off-loading** of vehicles from the ferry dock throughout the day and the morning and evening rush hour. Traffic peaks due to ferry traffic are limited in volume and duration due to the finite number of vehicles that can be accommodated by each ferry. Ferry traffic peaks tend to be lower in the winter season, when the average vehicle volume on the ferries is under their total capacity, and higher in summer, when the ferries run at capacity much of the time. Generally, summer weekends produce the most trips and winter weekdays produce the fewest trips. In addition to the higher traffic volumes in summer, more ferry trips are scheduled to and from Friday Harbor during the summer season.*
>
> ***Loading** of the vehicles onto the ferry does not produce the same type of congestion peaks on the roadway system as off-loading for several reasons. First, vehicles arrive at the on-loading area over a period of several hours. Second, Washington State Ferries (WSF) provides off-street queuing for a large volume of vehicles, which prevents them from affecting traffic. During summer peaks this queuing capacity can be exceeded and ferry traffic sometimes consumes street capacity while waiting to board the ferry."*

3.1.1 Traffic Volumes

The Town of Friday Harbor has instituted bi-annual traffic counts during the winter and summer seasons. Data from these counts are intended to be used for transportation planning and Level of Service (LOS) monitoring.

Traffic counts were provided by the Town of Friday Harbor for the ferry terminal traffic study. The most relevant traffic data was extracted for analysis. Table 1 summarizes the recent traffic data available in the ferry terminal area. A map of the counts is provided in Figure 1.

[5] Town of Friday Harbor - 2002 Comprehensive Plan - Transportation Chapter

Table 1- Recent Traffic Data in the Terminal Area (Town of Friday Harbor)

Location	Date	Observations
Spring Street between Front Street and First Street	11/3 to 11/16/2005 5/18 to 6/1/2006	15-minute counts – No summer data
Spring Street between First Street and Second Street	10/5 to 10/14/2005 5/18 to 6/1/2006	15-minute counts – No summer data
Spring Street between Second Street and Argyle Avenue	10/5 to 10/9/2005	15-minute counts – No summer data
Spring Street between Argyle Avenue and Blair Avenue	8/1 to 8/15/2005 2/23 to 3/9/2005	15-minute counts – Summer and Winter data – Does not include Fair Week
Spring Street between Blair Avenue and Mullis Street	8/1 to 8/15/2005 2/23 to 3/5/2005	15-minute counts – Summer and Winter data – Does not include Fair Week
First Street between Spring and West	8/3 to 8/15/2005	15-minute counts – Summer data – Does not include Fair Week
First Street between Spring and East	8/1 to 8/15/2005 5/18 to 6/1/2006	15-minute counts – Summer data – Does not include Fair Week
Second Street between Court and West	3/10 to 3/28/2005	15-minute counts – No Summer data
Harrison Street between A and B	3/10 to 3/28/2005	15-minute counts – No Summer data
Harrison Street between B and C	8/17 to 8/31/2005	15-minute counts – Summer data – Includes Fair Week
Warbass Way at Harrison St.	8/17 to 8/31/2005	15-minute counts – Summer data – Includes Fair Week
Nichols Street between Argyle Avenue and Sunshine Street	8/17 to 8/31/2005	15-minute counts – Summer data – Includes Fair Week

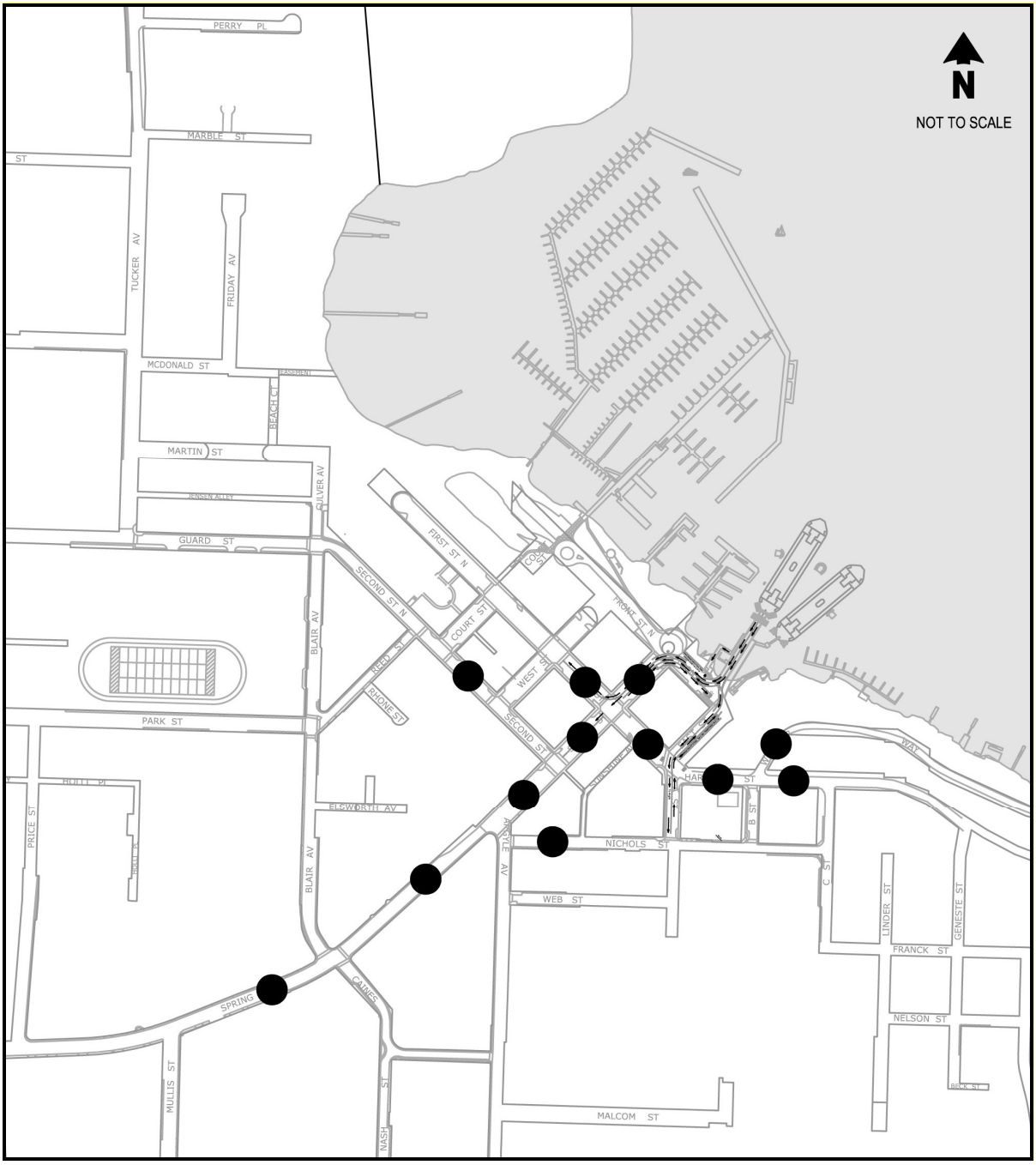

Figure 1- Location of Traffic Counts from Town of Friday Harbor

Spring Street Between First Street and Front Street

Figure 2 shows the daily traffic volumes measured from November 4 to 15, 2005 on Spring Street between First Street and Front Street.

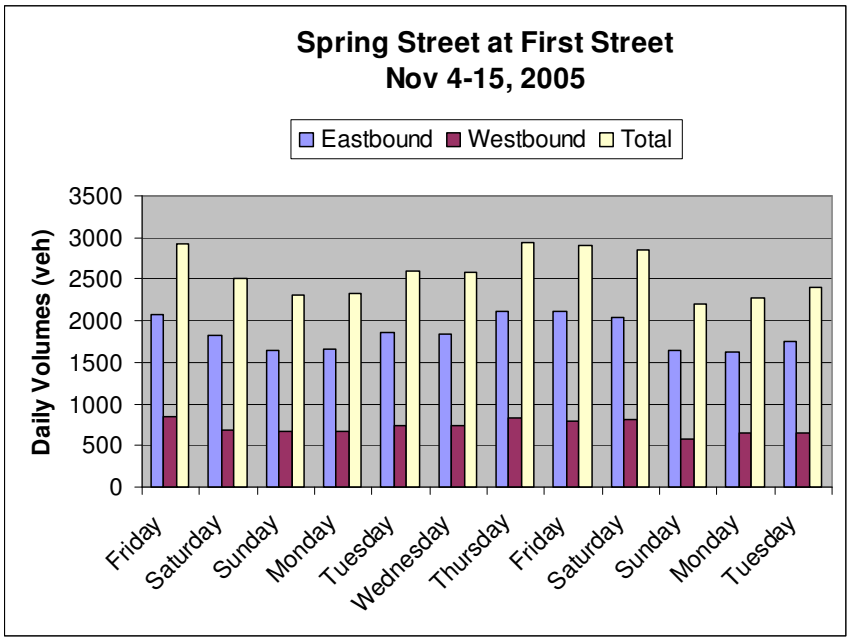

Figure 2- Daily Traffic Volumes on Spring Street Between First Street and Front Street

The difference in volumes between the uphill and downhill movements clearly highlights the predominance of ferry traffic over local traffic, as ferry vehicles do not use this section of Spring Street going downhill but only uphill. The graphic also illustrates the peaking of traffic during weekends (Fridays and Saturdays) and the Thursday before Veteran's Day.

Figures 3 and 4 present the distribution of traffic volumes throughout the day on Spring Street between First Street and Front Street. Figure 3 shows the distribution of uphill traffic (westbound) on Friday, November 11, 2005. Figure 4 shows the distribution of downhill traffic (eastbound) on Friday, November 4, 2005.

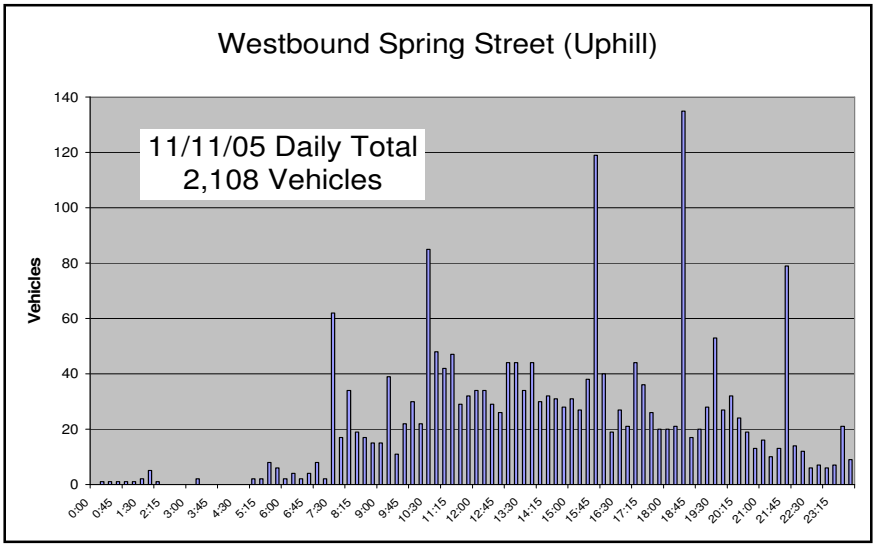

Figure 3- Time-of-Day Volumes on Westbound Spring Street Between First Street and Front Street

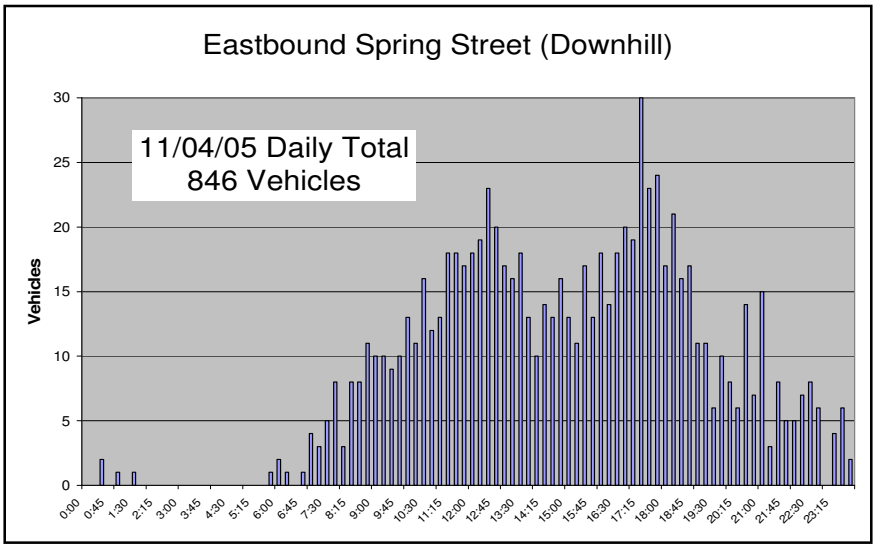

Figure 4- Time-of-Day Volumes on Eastbound Spring Street Between First Street and Front Street

The westbound movement shown on Figure 3 is largely dominated by ferry arrivals and vehicles off-loading from the ferries through Spring Street. As expected, the pattern of traffic peaks closely matches the schedule of ferry arrivals that day, which is shown in Table 2. The peak volume of 135 vehicles observed between 6:30 and 6:45 PM also closely matches the capacity of the Super Class ferry used on this route (144 vehicles).

The eastbound direction shown in Figure 4 does not exhibit the same peaking characteristics, as this movement is not affected by ferry operations (vehicles heading to the ferry terminal turn right on First Street). As a result, traffic volumes are lower and much more balanced throughout the day. Peak volumes are associated with local activities and are observed during lunchtime and at the end of the workday (5:00 to 6:00 PM).

Spring Street Between First Street and Second Street

Figure 5 shows the daily traffic volumes measured from October 6 to 13, 2005 on Spring Street between First Street and Second Street.

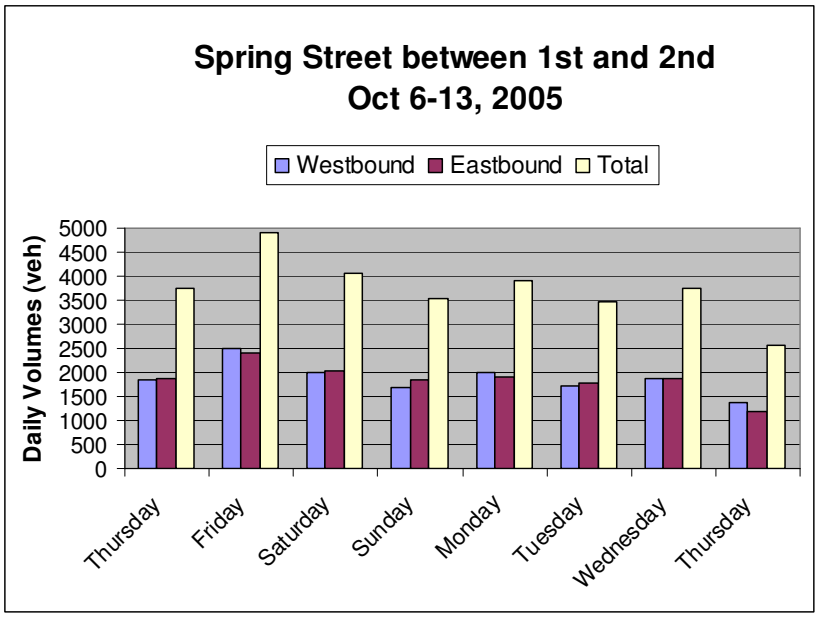

Figure 5- Daily Traffic Volumes on Spring Street Between First Street and Second Street

This section of Spring Street does capture all ferry traffic, both loading and off-loading, in addition to local traffic. As a result, the volumes are well balanced between both directions. Higher volumes are observed on Friday, which corresponds to the peaking of ferry traffic arrivals.

The time-of-day distribution of traffic is similar to what was presented for the section of Spring Street between Front Street and First Street. The eastbound movement (local traffic and ferry loading access) is fairly balanced throughout the day, with 15-minute peaks below 60 vehicles. The westbound movement distribution is highly influenced by ferry arrivals; the 15-minute peaks on Friday afternoon reach 140 vehicles, which correspond to the unloading of a full Super Class ferry.

Spring Street Between Argyle Avenue and Blair Avenue

Figure 6 shows the variation of average traffic volumes between winter and summer seasons. Counts at Spring Street between Blair Avenue and Argyle Avenue were available for the periods between February 24 to March 8, 2005 and August 2 to 14, 2005. The figure clearly illustrates the seasonal effects with August volumes on Spring Street about 20 percent higher than February/March volumes.

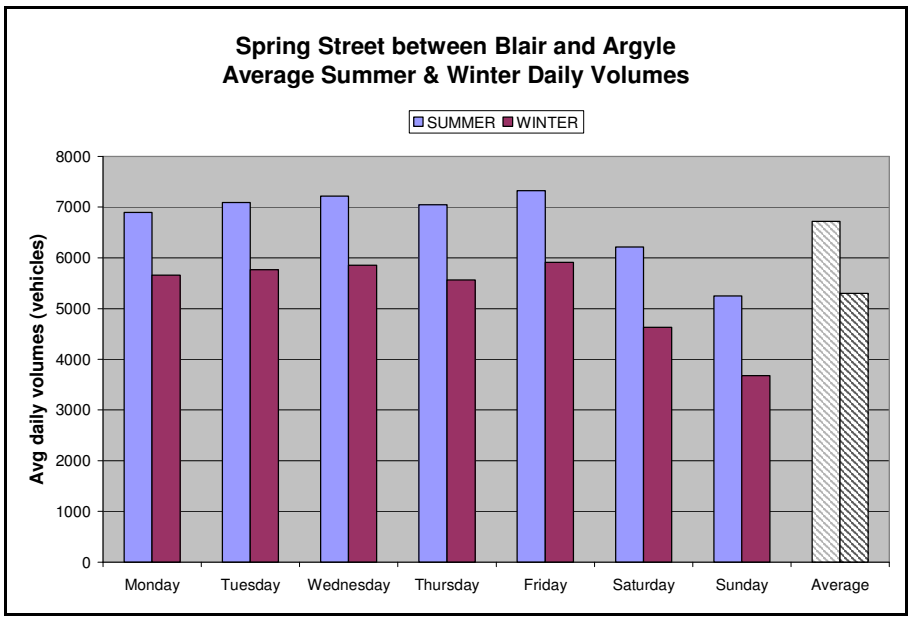

Figure 6- Average Daily Traffic Volumes on Spring Street Between Blair Avenue and Argyle Avenue

The graphic also shows that the weekday variations are similar in the winter and summer, with lower volumes on Saturdays and Sundays, and similar volumes Monday through Friday. It should be noted that this section of Spring Street is less impacted by ferry traffic than the blocks further east; vehicles heading to or coming from Roche Harbor Road and Beaverton Valley Road, as well as vehicles using Argyle Road, are not found on this particular section of Spring Street.

First Street Between Spring Street and East Street

Summer 2005 data is available for this section of First Street, which provides access to the ferry lanes. As expected, the southbound direction, which includes traffic to the ferry holding lanes and pick-up/drop-off, has a lot more traffic than the other direction.

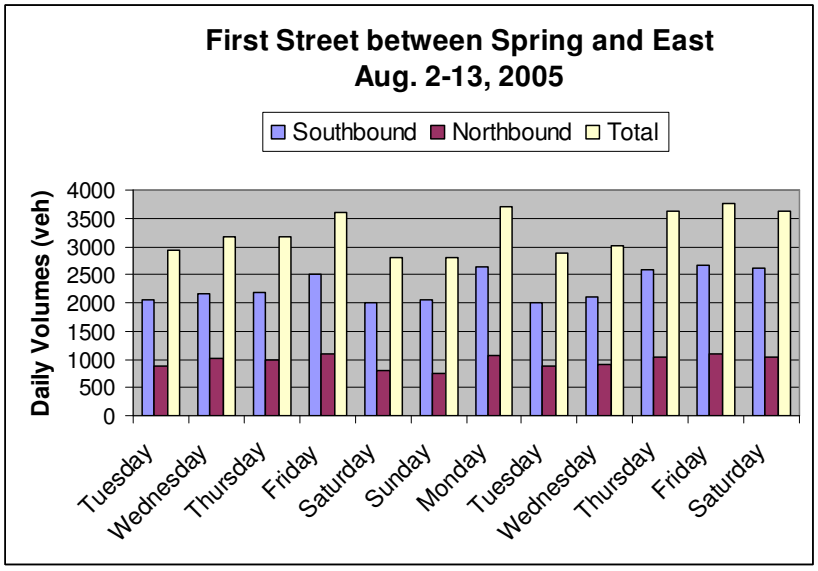

Figure 7- Daily Traffic Volumes on First Street Between Spring Street and East Street

3.1.2 Vehicle Speeds

The traffic data collected by the Town of Friday Harbor includes limited speed information. Vehicle speeds are classified by speed ranges: 0-15 mph, 15-20 mph, 20-25 mph, 25-30 mph, etc. A sample of the results is provided in Table 2. Speeds are shown to be lower in the uphill section of Spring Street, between Front Street and First Street.

Table 2 - Vehicle Measured Speeds

Location	Direction	Date	Speed Distribution
Spring Street between Front and First	Westbound (uphill)	Friday, 11/11/05	Below 15 mph: 76% 15-20 mph: 23% 20-25 mph: 2%
Spring Street between Front and First	Eastbound (downhill)	Friday, 11/11/05	Below 15 mph: 59% 15-20 mph: 37% 20-25 mph: 4%
Spring Street between First and Second	Westbound	Friday, 10/07/05	Below 15 mph: 58% 15-20 mph 36% 20-25 mph: 5%
Spring Street between First and Second	Eastbound	Friday, 10/07/05	Below 15 mph: 56% 15-20 mph: 41% 20-25 mph: 3%

3.1.3 Vehicle Classification

The traffic data collected by the Town of Friday Harbor includes vehicle classification information. Vehicle classes are defined in Table 3. The results of the analysis at some specific locations and dates are shown in Table 4.

Table 3 - Vehicle Classes

Class	Vehicle Type
1	Bikes
2	Passenger cars
3	Other 2-axle, 4-tire single-unit vehicles (i.e. pickup trucks and SUVs)
4	Buses
5	2-axle, 6-tire single-unit trucks
6	3-axle single-unit trucks
7	4-axle single-unit trucks
8	Less than 5-axle, double unit trucks

Table 4 - Vehicle Classification Analysis

Location	Direction	Date	Class Distribution
Spring Street between Front and First	Westbound (uphill)	Average between 5/11 and 15/11/2005	Class1: 1% Class 2: 72% Class 3: 22% Class 5: 4%
Spring Street between Front and First	Eastbound (downhill)	Average between 4/11 and 15/11/2005	Class1: 0% Class 2: 75% Class 3: 21% Class 5: 4%
Spring Street between Blair and Argyle	Westbound	Average between 8/2 and 8/14/2005	Class1: 1% Class 2: 77% Class 3: 16% Class 5: 4% Class 8: 1%
First Street between Spring and East	Southbound	Average between 8/2 and 8/13/2005	Class1: 2% Class 2: 66% Class 3: 26% Class 5: 6% Class 8: 1%

Vehicle class distribution is fairly consistent across the various locations studied and seasons. There is more bicycle traffic in the summer, as expected, but the percentage remains low. There are more double-unit trucks in the summer, with some counts reaching about 50 double-unit trucks per day per direction on Spring Street.

3.1.4 Pedestrian Volumes

The Town of Friday Harbor maintains over five miles of sidewalks. Sidewalks are available in the downtown commercial area near the ferry terminal. Sidewalks within the Town are displayed in Figure 8 extracted from the Town's Comprehensive Plan.

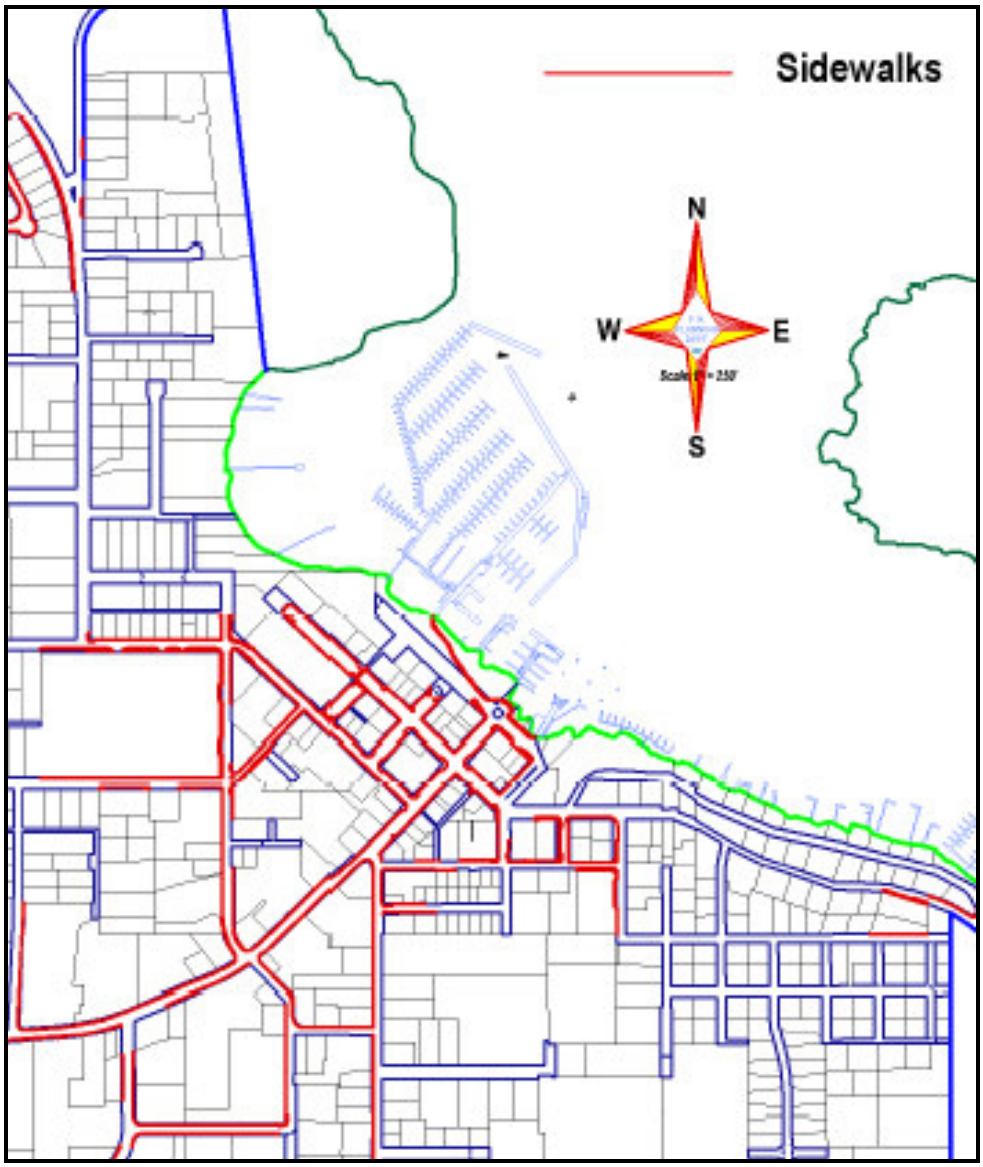

Figure 8- Sidewalks Near Ferry Terminal

3.1.5 Parking Supply and Utilization

Based on the parking survey conducted in 2005 by the Town of Friday Harbor, a total of 470 timed, public parking spaces are available for short-term parking in the summer. The location of the timed parking spaces is shown In Table 5 and Figure 9.

Table 5 - Available Timed Parking Spaces

Street	Available Spaces In Summer 2005
1st Street	75
2nd Street	39
Spring Up	48
Spring Lower	23
West Street	28
Court Street	21
Argyle Avenue	19
Guard Street	23
East Street	6
Front Street	7
Web 8hr	29
1st Court 8hr	49
Port	25
A Street	13
B Street	7
Nichols	36
Culver 8hr	6
Blair	15
TOTAL	**470**

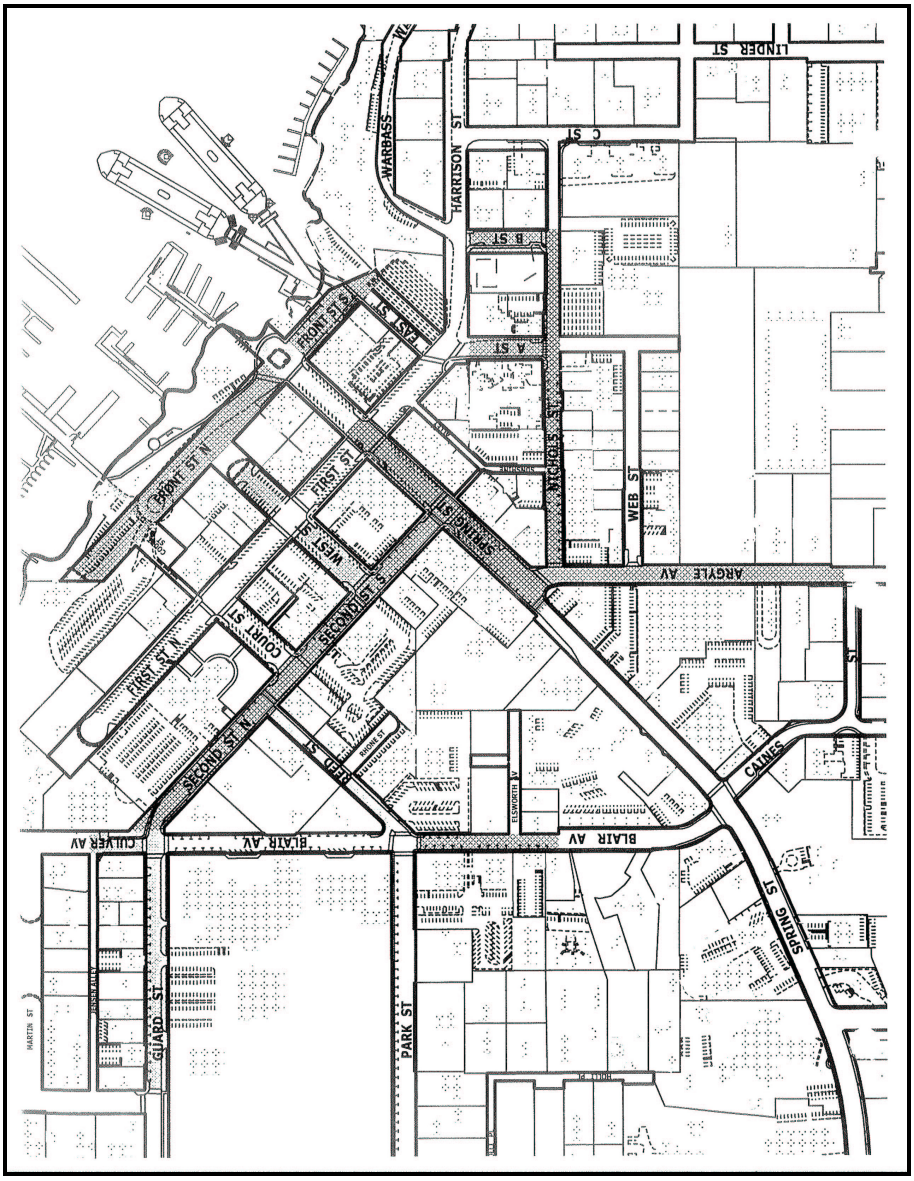

Figure 9- Parking Restriction Zones

Time limits associated with these spaces are 30 minutes, 2 hours and 8 hours. Parking is also available outside the regulated zone, both on street and in private lots. Title 10 (Vehicles and Traffic) of the Municipal Code provides details on parking restrictions.

- The 30-minute parking limit is in effect between 8:00 AM and 5:00 PM each day except Sundays and holidays.
- The two-hour parking limit is in effect between 8:00 AM and 5:00 PM each day except Sundays and holidays.
- The eight-hour parking limit is in effect between 8:00 AM and 5:00 PM each day except Sundays and holidays.

Angle parking is required in the following areas:

- Both sides of Spring Street from the waterfront at Front Street to the intersection with Argyle Avenue.
- Both sides of First Street from Court Street to the intersection with East Street.
- Both sides of First Street from Court Street to its northwesterly end.
- Both sides of Court Street from First Street to Second Street.

A survey of parking utilization was conducted by the Town of Friday Harbor in 2005. The percentage of unused parking spaces between March and September is shown In Table 6.

Table 6 - Parking Utilization Statistics

Month	Available Spaces	Percent Unused Spaces
March	391[6]	42%
April	470	31%
May	470	29%
June	470	30%
July	470	28%
August	470	30%
September	470	35%

The percentage of unused spaces was found to be 30 percent on average, and never less than 28 percent for the month.

WSF park-and-ride lot (Lot C east of remote holding lanes) has a capacity of 50 to 60 standard cars.

3.2 WSF FERRY OPERATIONS

3.2.1 Scheduled Service

Currently, ferries call on the Friday Harbor Terminal twelve times per day with additional calls on Friday nights during the off-season and on Fridays, Saturdays, and Sundays during the summer. Peak travel times from Friday Harbor are all day Sundays and Monday mornings.

The following five vessels currently serve the San Juan Islands and Sidney, B.C.:

1. MV CHELAN: Issaquah 130 Class; 124 cars; 1,076 passengers
2. MV YAKIMA: Super Class; 144 cars, 2,500 passengers
3. MV SEALTH: Issaquah Class; 90 cars; 1,200 passengers

[6] Eight-hour parking limit on Web St. and First St. west of Court not enforced before April.

4. MV ILLAHEE: Steel Electric Class; 59 cars, 616 passengers
5. MV HYAK: Super Class; 144 cars, 2,500 passengers

On the Spring 2006 schedule, dwell times at Friday Harbor vary from 10 minutes, for the inter-island vessel to 35 minutes for the Anacortes main line vessels, with an average of 22 minutes. On the Summer 2006 schedule, the maximum scheduled dwell time is 50 minutes for the main line boat, the minimum is 20 minutes for the inter-island boat, and the average is 30 minutes. The additional dwell time reflects the higher passenger and vehicle loads that are carried during the peak summer travel season.

Ferries at the Friday Harbor terminal currently unload via a single lane of traffic and are loaded (occasionally) using two lanes. Pedestrians are loaded and unloaded via the car deck. As currently configured, ferry Lot A provides approximately 2,345 linear feet of parking, Lot B provides approximately 500 linear feet plus 45 parking stalls, and Lot C provides approximately 1,100 linear feet. Combined, this is sufficient for 217 cars, which is 50 percent more than can be loaded onto a single Super Class ferry.

3.2.2 Ridership Statistics

The annual ridership for Anacortes-San Juan Islands (including inter-island travel) has grown from 711,500 riders in 1975 to more than 1.7 million riders in 2005. During the same period, annual ridership for Anacortes-Sidney has dropped from 195,000 to 113,500.

In recent years, annual ridership for Anacortes-Friday Harbor has decreased steadily, as shown in Table 7. Total annual ridership has decreased by 4.5 percent between 2002 and 2005, while the total number of vehicles has decreased by 3 percent. It is assumed that this decrease is due to a period of extreme increases in fares, which are leveling out. It is expected that traffic will start to increase again, driven by increased population on the island and increases in tourist traffic.

Table 7 - WSF Anacortes-Friday Harbor Annual Traffic Statistics

Year	Total Vehicles (% change from a year ago)	Total Passengers (% change from a year ago)	Total Riders (% change from a year ago)
2005	309,576 (-2.3%)	433,612 (-3.1%)	743,188 (-2.8%)
2004	317,020 (+1.0%)	447,540 (-2.1%)	764,560 (-0.9%)
2003	314,014 (-1.6%)	457,238 (-0.3%)	771,252 (-0.9%)
2002	319,118 (+0.3%)	458,832 (-3.1%)	777,950 (-1.7%)

Summer Statistics

Statistics for the summer season only (July through September) are shown in Table 8 for service between Anacortes and Friday Harbor. Recent trends for the summer season are similar to annual trends, with total summer ridership decreasing by 7 percent and total summer vehicles decreasing by over 2 percent between 2002 and 2005.

Figure 10 illustrates the high seasonal variations of total ferry ridership between Anacortes and Friday Harbor. The summer season represents 38 percent of the annual traffic. The six-month period from April to September represents 64 percent of the annual traffic.

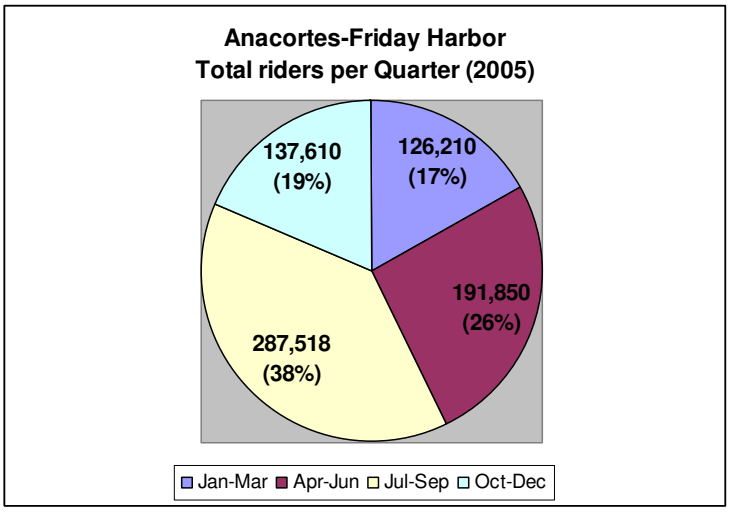

Figure 10- Anacortes to Friday Harbor Total Riders per Quarter (2005)

Figure 11 shows the monthly breakdown of total vehicles on the Anacortes to Friday Harbor service. The peak month is August, followed by July. The total number of vehicles in August is 8 percent higher than the July total. The months of June and September come next, and have similar vehicle traffic volumes.

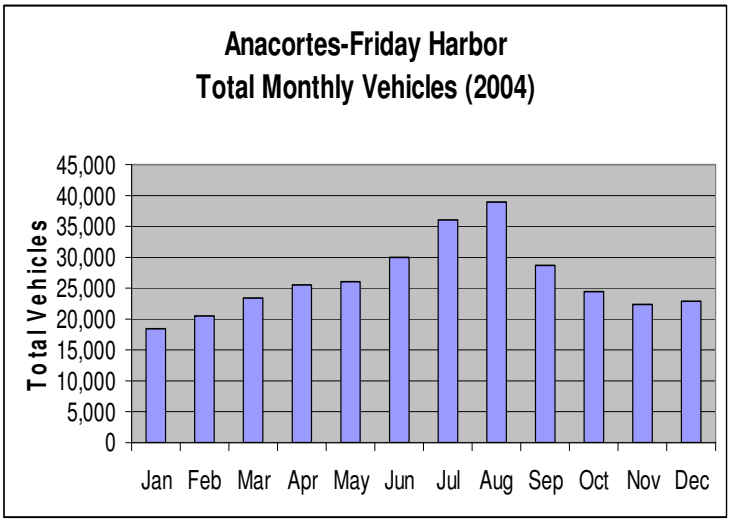

Figure 11 - 2004 Monthly Vehicles, Anacortes-Friday Harbor

Summer 2005 Details

WSF provided detailed trip statistics on service from Anacortes to Friday Harbor for two weeks in the summer of 2005. Data was not collected for traffic traveling from Friday Harbor to Anacortes. Statistics included counts of walk-on passengers and paid vehicles for each boat during the weeks of July 24 through 30, 2005 and August 7 through 13, 2005.

Figures 12 and 13 show total daily counts of paid vehicles and walk-on passengers for the July and August weeks respectively. The total vehicles counted during both weeks was the same (about 4,200 vehicles weekly). The total number of walk-ons was almost the same (3,800 weekly in July and 4,000 in August).

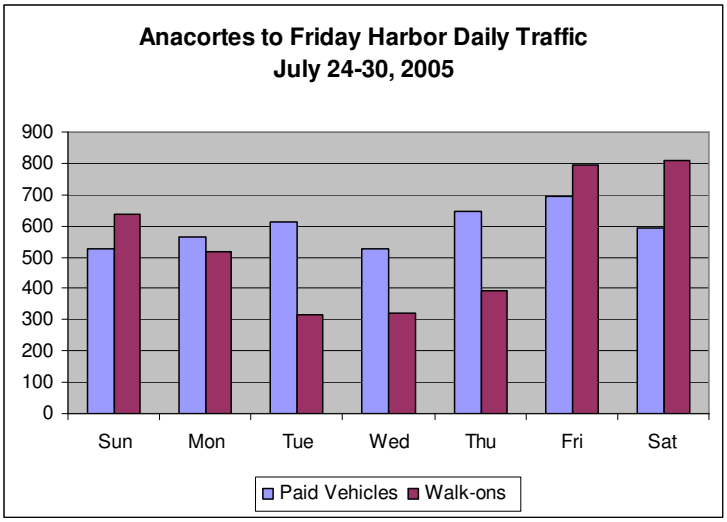

Figure 12- Anacortes to Friday Harbor Daily Traffic (July 2005)

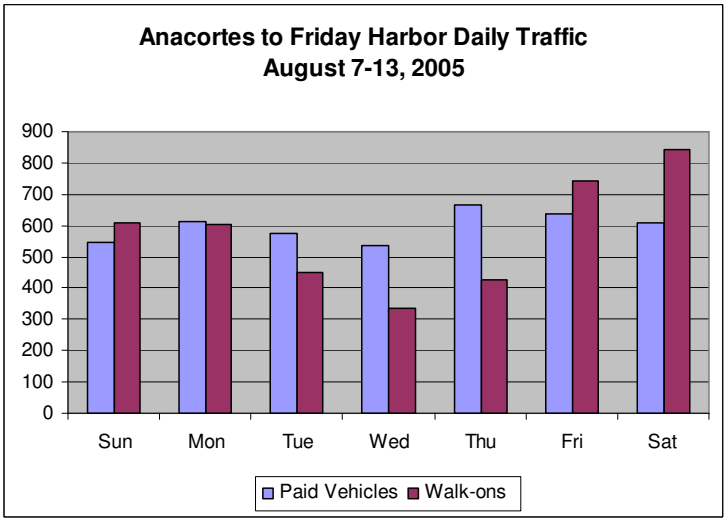

Figure 13- Anacortes to Friday Harbor Daily Traffic (August 2005)

Similar daily patterns are observed during both weeks with daily vehicle counts peaking on Thursdays and Fridays, while walk-on passenger counts peaked on Fridays and Saturdays.

Maximum daily vehicle counts were around 700 vehicles. Maximum daily walk-on counts were just over 800 passengers.

Figures 14 and 15 illustrate the range of vehicles counted on each boat for the July and August weeks respectively. Similar trends were observed during both weeks. The boat carrying the most vehicles was the one leaving Anacortes at 11:05 AM. On average, this boat carried close to 140 vehicles, with the weekly peak on Friday reaching 160 paid vehicles. The second most used boat for vehicles was the one leaving Anacortes at 2:00 PM, with over 100 vehicles on average. Boats leaving at 8:35 AM, 5:10 PM and 8:25 AM carried on average between 70 and 90 vehicles.

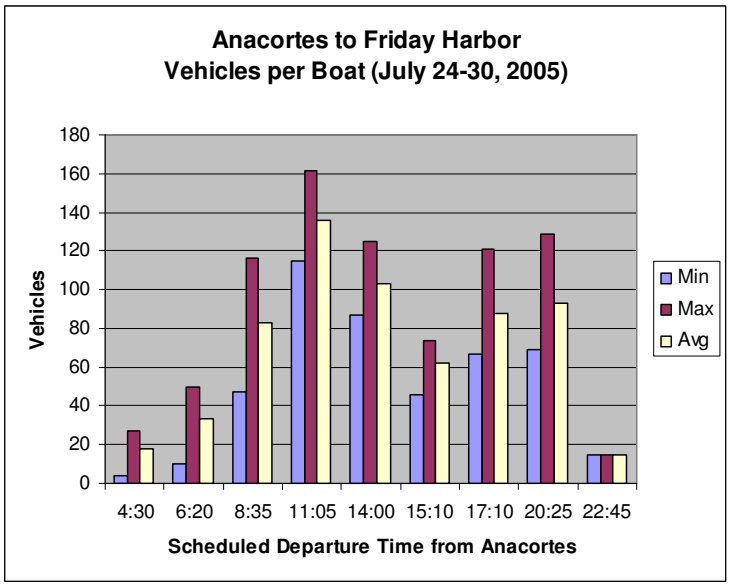

Figure 14- Anacortes to Friday Harbor Vehicles per Boat (July 2005)

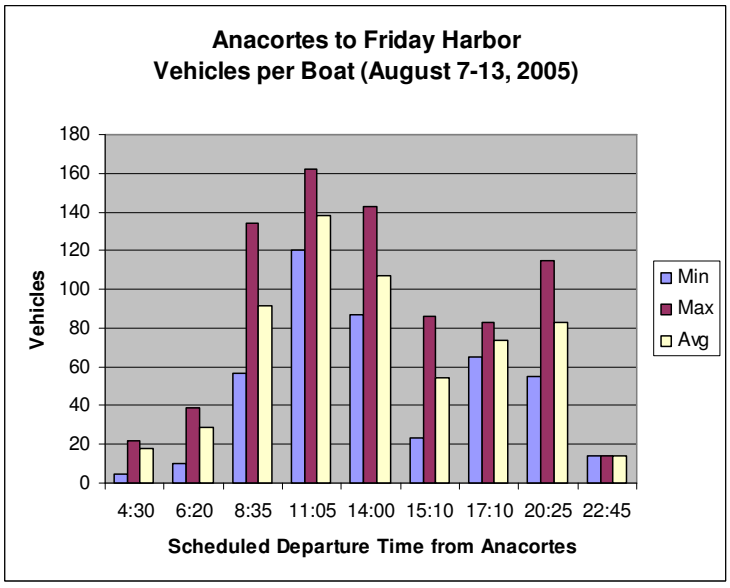

Figure 15- Anacortes to Friday Harbor Vehicles per Boat (August 2005)

Figures 16 and 17 illustrate the range of walk-on passengers counted on each boat for the July and August weeks, respectively. Again, similar trends were observed during both weeks. The boat carrying the most walk-ons was the one leaving Anacortes at 11:05 AM on Saturday during both weeks, with a maximum of 412 walk-ons on July 30 and 350 walk-ons on August 13. On average during the week, the 11:05 AM boat was the most popular for walk-ons, with about 230 walk-on passengers on average. The second most used boat for walk-on passengers was the 8:35 AM boat, with about 120 walk-ons on average.

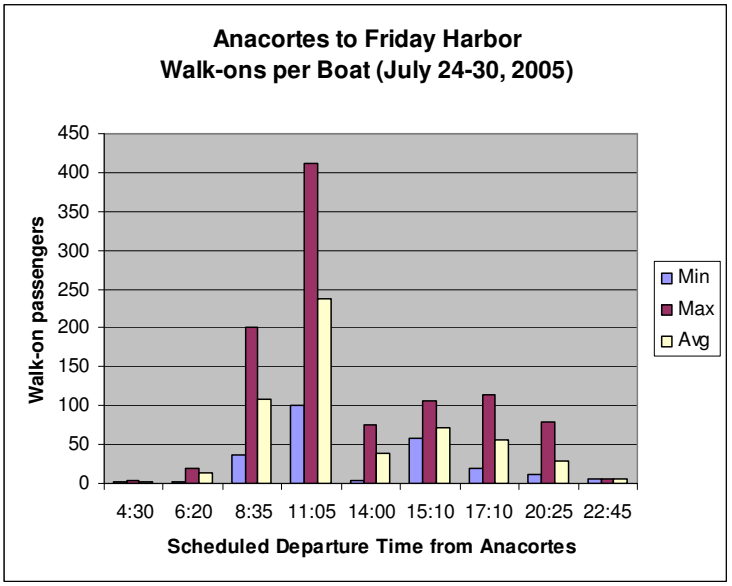

Figure 16- Anacortes to Friday Harbor Walk-on Passengers per Boat (July 2005)

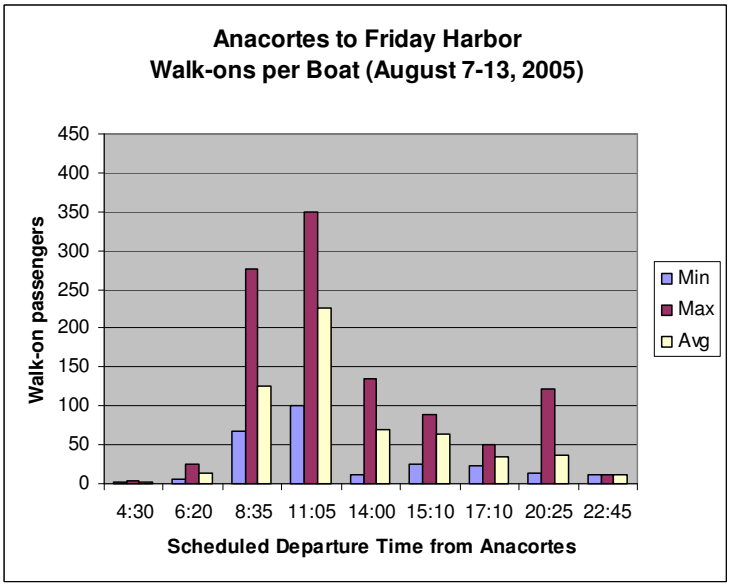

Figure 17- Anacortes to Friday Harbor Walk-on Passengers per Boat (July 2005)

3.2.3 Vehicle Classification

In 2005, more than 300,000 vehicles were transported on the Anacortes-Friday Harbor route. Almost 25,000 of these were oversize vehicles, which represent 8 percent of the total vehicles. Almost 5,000 of these oversize vehicles were over 50 feet long.

Figure 18 illustrates the breakdown of vehicles per fare category for the 2005 summer season. Commercial vehicles represent 36 percent of the overall vehicles in the summer. This ratio is even higher when considering the total annual traffic: In 2005, commercial vehicles represented 44 percent of the overall vehicles. Oversize vehicles represent more than 7 percent of the overall vehicles in the summer.

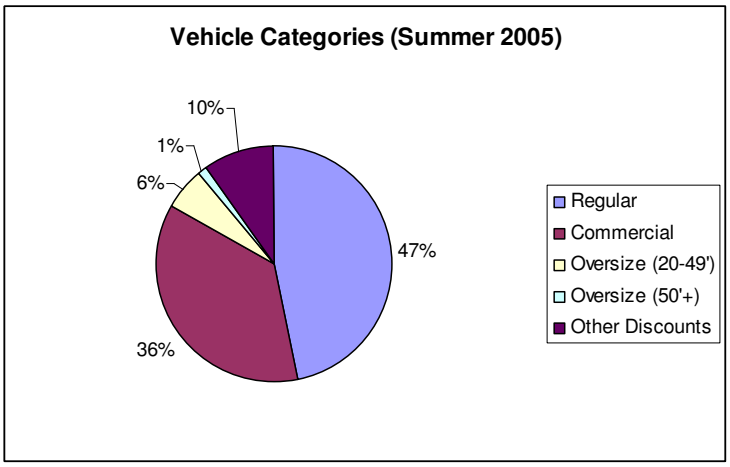

Figure 18- Anacortes to Friday Harbor Vehicle Categories (Summer 2005)

WSF reports that each year over 38,000 bicyclists ride onto the ferry in Anacortes and a substantial number are carried by vehicles onto the ferry.

3.2.4 Dwell Time Statistics

Anacortes Departures

The dataset provided by WSF for the Anacortes-Friday Harbor route indicated actual departure times out of Anacortes. This allowed for an analysis of the delays for the boats leaving Anacortes during two weeks in July and August 2005 for which data was available.

The sample dataset included a total of 112 departures. Overall, 71 percent of the boats left Anacortes on time or within 5 minutes of the scheduled departure time; 18 percent were delayed between 5 and 15 minutes; 7 percent were delayed between 15 and 30 minutes; and 4 percent (i.e. five boats) had delays of more than 30 minutes.

Most of the long delays occurred with boats scheduled for departure at 2:00 PM, 3:10 PM, and 11:05 AM, as shown in Figure 19. The 2:00 PM boat out of Anacortes had average departure delays of close to 20 minutes. Only three boats scheduled to depart at 2:00 PM (out of 14 within the observation period) actually left on time or within 5 minutes.

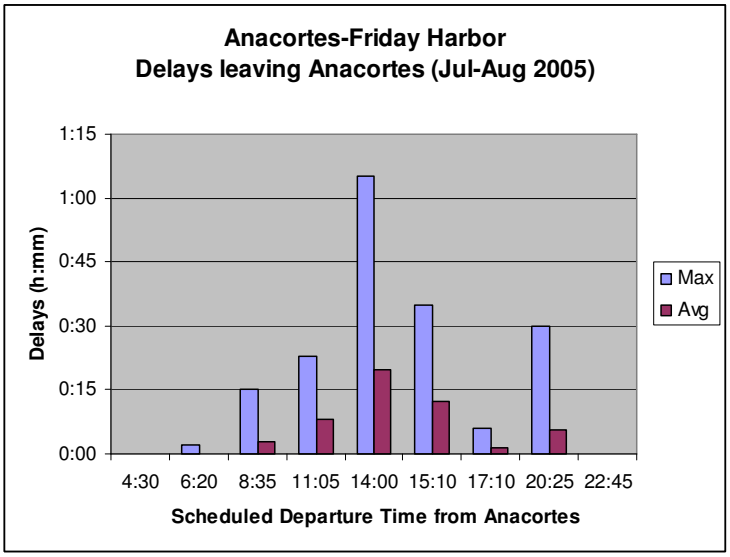

Figure 19- Delays out of Anacortes (July-August 2005)

Friday Harbor Arrivals and Departures

Observations from the Town of Friday Harbor provided additional information on actual ferry arrival and departure times out of Friday Harbor between August 12 and September 1, 2005.

The total sample size is 59 ferry sailings. Overall, 54 percent of the sailings began unloading within 5 minutes of the scheduled arrival time and 51 percent left Friday Harbor within 5 minutes of the scheduled departure time. Of the departures, 31 percent were delayed between 5 and 15 minutes; 14 percent were delayed between 15 and 30 minutes; and 5 percent (i.e. three boats) had delays of more than 30 minutes.

Of the 28 late departures from Friday Harbor, 23 were late arriving. Of the 32 late arrivals, 8 were able to depart on time and 14, while still departing late, made up time at Friday Harbor and were not as late departing as they were arriving. This dataset suggests that while dwell time is an issue in Friday Harbor, there are other issues across the system that have similar impacts on schedule maintenance.

Figure 20 shows the distribution of delays across the day for boats leaving Friday Harbor. Maximum and average delays are very consistent across the four daily boats.

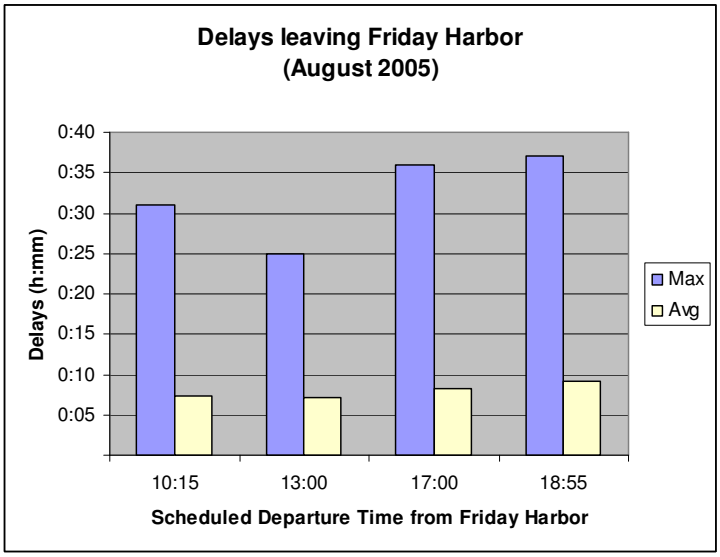

Figure 20- Delays Out of Friday Harbor (August 2005)

Dwell Times in Friday Harbor

Observations from the Town of Friday Harbor provided additional information on actual ferry dwell times in Friday Harbor between August 12 and August 31, 2005. Figure 21 illustrates the results of the analysis. For each sailing analyzed, the graphic shows the scheduled dwell time in relation with actual dwell times observed (average, minimum, and maximum values). It can be observed that average dwell times turned out to be very close to the scheduled dwell times. However, dwell times for a particular sailing varied significantly from one day to another. For instance, dwell times for the 1:00 PM departure boat varied between 30 and 57 minutes. The standard deviation of the dwell times varies between 4 minutes (for the 10:15 AM sailing) to over 8 minutes (for the 1:00 PM sailing).

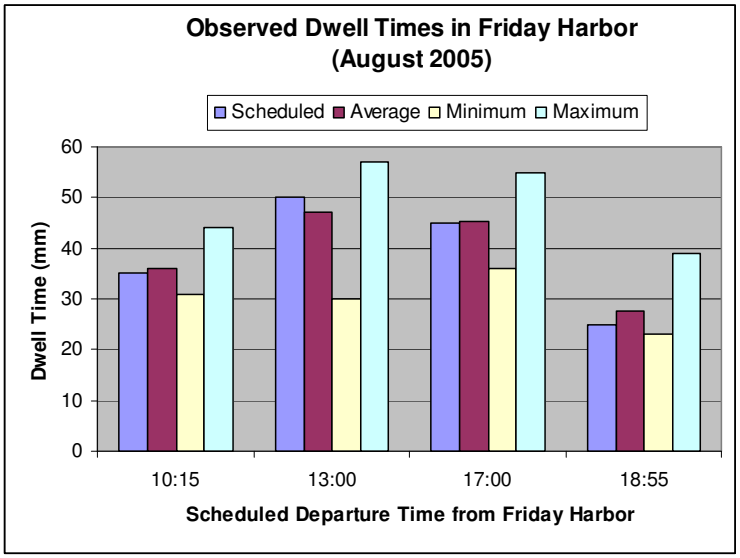

Figure 21- Scheduled and Observed Dwell Times in Friday Harbor (August 2005)

Details on vehicle unloading and loading times based on the same observation sample are shown graphically In Figures 22 and 23. Overall, vehicle unloading took 16 minutes on average while vehicle loading took 18 minutes. The standard deviation of unloading times was 3 minutes while the standard deviation of loading times was 5 minutes. The overall maximum unloading time was 28 minutes while the overall maximum loading time was 34 minutes. On average, the boat that took the longest to unload was the 1:00 PM sailing (21 minutes) and the boat that took the longest to load was the 5:00 PM sailing (22 minutes).

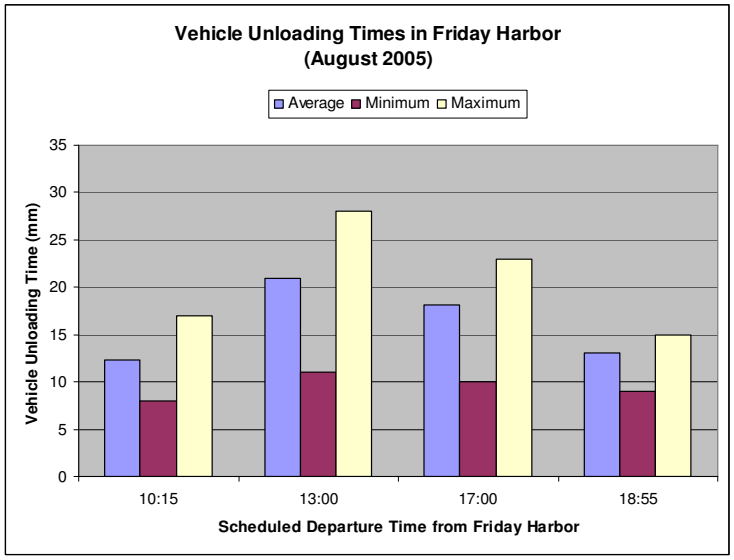

Figure 22- Observed Vehicle Unloading Times in Friday Harbor (August 2005)

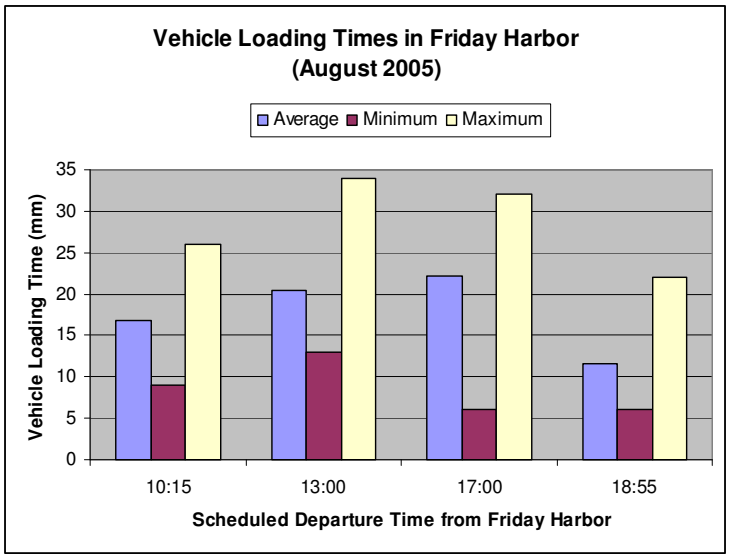

Figure 23- Observed Vehicle Loading Times in Friday Harbor (August 2005)

3.3 PRIVATE FERRY OPERATIONS

3.3.1 Clipper Navigation

Clipper Navigation provides passenger-only ferry service from Seattle to Friday Harbor seven days a week during the peak tourist season and on weekends only during the "shoulder" season (mid-April to mid-May and the second half of September). There is no service from October through mid-April. The round-trip fare is $60 and only one trip per day is offered. The vessel on this route carries a maximum of 239 passengers.

3.3.2 Victoria - San Juan Cruises

Victoria – San Juan Cruises sails between Bellingham, Washington and Friday Harbor during the summer season, from late May to late September. One round-trip per day is offered on a 42-passenger vessel and the round-trip adult fare is $49.

3.3.3 Victoria Express

Victoria Express offers day-trip service from Victoria, BC, to Friday Harbor on a 149 passenger ferry, between late May and late September. The one-way fare is $35.

Table 8 - Summer 2006 Friday Harbor Ferry Arrivals

Carrier	Arrival Time	Walk-on Passengers
WSF (direct from Anacortes)	*5:35 AM*	
WSF (Anacortes via Lopez)	7:35 AM	
WSF (Inter-Island)	8:20 AM	
WSF (direct from Anacortes)	*9:50 AM*	Up to 500 (Sat)
WSF (Inter-Island)	11:10 AM	
Clipper Navigation (Seattle)	11:15 AM	239 (max)
Victoria San Juan Cruises (Bellingham)	11:45 AM	42 (max)
Victoria Express (Victoria)	12:00 PM	149 (max)
WSF (direct from Anacortes)	*12:10 PM*	Up to 500 (Sat)
WSF (Inter-Island)	13:55 PM	
WSF (direct from Anacortes)	*16:15 PM*	Up to 500 (Fri)
WSF (Inter-Island)	17:15 PM	
WSF (Anacortes via Lopez)	18:30 PM	
WSF (direct from Anacortes)	*21:30 PM*	
WSF (Anacortes via Lopez & Orcas; Friday Only)	0:55 AM	
WSF (Anacortes via Lopez & Orcas; Saturday, Sunday, & Monday only)	03:25 AM	

4 TRANSPORTATION IMPROVEMENT OPTIONS

As described above, traffic in the Town of Friday Harbor is frequently congested, particularly in the summer season during ferry unloading and loading. This congestion leads to excessive dwell times for the ferries, which limits the ability of WSF to increase ferry service levels. To reduce dwell times, improvements are needed both in terminal operating efficiencies and in traffic flow through the streets of Friday Harbor. The options for reducing ferry dwell times can be grouped into five general categories:

- Terminal operations
- Kiss-and-ride
- Traffic Management in Friday Harbor
- Pedestrian Management in Friday Harbor
- Ferry Operations

The specific options for each category are described below. A matrix of categories, options, sources, and comments is provided in Appendix B.

4.1 TERMINAL OPERATIONS

4.1.1 Vehicle Unloading

The single lane of traffic available to vehicles exiting the ferry is a major contributor to the delays experienced by WSF. Although the ferry dock and transfer span have recently been modified to accommodate two lanes of traffic, there is effectively only one lane available on the local streets that form the egress route. As a result, any disruption in the flow of traffic, such as those due to pedestrians crossing the street or a parked car backing out of a diagonal parking space, can have the effect of stopping traffic all the way back to the ferry dock. Solutions to this particular issue will require changes in traffic management through the Town of Friday Harbor. Because of this interconnectivity, the options described in this section include changes in both areas.

Options that have been discussed for improving vehicle-unloading traffic include:

- Two lane unloading.
  - Per the plan submitted by Roger Bennett.
  - Per the 1998 Master Plan (non-trucks up East Street, mixed traffic up Spring Street via Front Street).
  - Use east side of existing holding area for exit lanes.
  - Other two lane traffic flow patterns.
- Extend West Street to Front Street and direct traffic bound for the north end of San Juan Island to West Street.

4.1.2 Passenger Unloading and Loading

Interactions between vehicles and pedestrians also cause significant delays in the unloading process. Uncontrolled interactions occur when pedestrians cross the flow of traffic at a location other than marked sidewalks. Reducing or eliminating uncontrolled interactions will be critical to reducing dwell time. Separating pedestrians from vehicles during the unloading process will also reduce dwell time but if they are not kept separate as they move away from the ferry dock it will be difficult to meet the dwell time targets.

Allowing passengers and vehicles to unload and load simultaneously should reduce the total unloading time by eliminating the need to hold cars until the last passenger has cleared the transfer span. At other terminals in the WSF system, this is achieved through the use of overhead walkways. Concern over the use of such walkways has been expressed by residents of Friday Harbor who are concerned with the aesthetic impact of a large structure on the waterfront. Concepts which address this concern have been produced but the design has not been taken to the point where a cost estimate can be developed.

- Overhead loading options:
    - Direct access to Spring Street Landing.
    - Access to existing terminal building.
    - Access to current pedestrian area of WSF dock (south side).
    - Access to both north and south of vehicle unloading lanes.

Other options for keeping pedestrians and vehicles separated during unloading and loading include:

- Provide a movable gate across Front jStreet on the north side of the crosswalk from the ferry landing to the northern corner of Front Street and East Street.
- Provide a boardwalk under the ferry terminal to allow pedestrian traffic along the waterfront without crossing ferry vehicle traffic lanes.
- Improve signage and way-finding for pedestrians as they are leaving the terminal.

4.1.3 Vehicle Loading

Reductions in the time it takes to load ferries are also needed to achieve consistent 25 to 35 minute dwell times. WSF has tried two-lane loading with some success but the need for vehicles going to other islands to back onto the ferry precludes this option for at least a portion of most departures. The use of multiple remote holding lots on busy days also contributes to delays in loading the ferries. Options that have been suggested for improving vehicle loading include:

- Two lane loading.
- Provide a direct route from remote staging areas.
- Consolidate all staging into a single lot. (Bow property?)
- Provide a reservation system.
- "Just-in-time" loading: Pick up boarding coupons before the sailing at a new location with large holding capacity.

- Provide a "Virtual Parking Lot": A radio alert (similar to highway advisory radio) could be used to tell people when to queue for the ferry.

4.2 KISS-AND-RIDE

Another significant issue associated with passengers arriving in Friday Harbor is the provisions of designated "kiss-and-ride" facilities near the ferry terminal. At most intermodal transit terminals, "kiss-and-ride" facilities are well marked and used by daily commuters. In Friday Harbor, there is no area designated for "kiss-and-ride" and most of the walk-on passengers who are picked up only come to San Juan Island a few times a year. This leads to some confusion among arriving passengers and difficulty in assessing the amount of "kiss-and-ride" capacity required. The fifteen-minute parking zone on Front Street, between Spring Street and East Street, is a de facto "kiss-and-ride" but because it is not exclusive, not all of the parking spots in the zone are available for drivers waiting for a ferry to arrive.

The 1998 Master Plan recommended converting the existing primary holding lot into a combination short-term parking and "kiss-and-ride" facility, with the exact allocation of spaces to be determined as part of the implementation design. Other options for providing "kiss-and-ride" facilities include:

- Designating "kiss-and-ride" spots on East Street.
- Create a "kiss-and-ride" south of Lot "C" on the Douglas property.
- Converting the auxiliary vehicle holding lot at the southeast corner of Nichols Street and "A" Street to a combination "kiss-and-ride" and short term parking facility.

When considering potential locations for a "kiss-and-ride" facility, the following issues should be considered:

- Visibility from the ferry terminal: Walk-on passengers departing the ferry should be able to see the "kiss-and-ride" before they leave the ferry dock to reduce the number of pedestrians walking around looking for it.
- Proximity to the ferry terminal: The "kiss-and-ride" facility should be close enough to the ferry terminal that passengers being dropped off do not mind walking from the "kiss-and-ride" facility. If it is too far from the ferry terminal, it will not be used.
- Inress and egress: It should be easy to get into and out of; the "kiss-and-ride" otherwise drivers, particularly local drivers, will find other spots that are easier to use.

4.3 TRAFFIC MANAGEMENT IN FRIDAY HARBOR

In addition to the improvements specifically related to two lane unloading described in Section 4.1.1, changes have been suggested for reducing congestion in downtown Friday Harbor that should improve the efficiency of ferry unloading operations. Options for improving traffic management include:

- Continue the use of manual traffic control.
- Intersection improvements:
    - Traffic circle at the intersection of Spring Street and Argyle Avenue.
    - Traffic signals.

- Improved signage.
- Change diagonal parking to parallel parking on Spring Street.
- Eliminate parking on Spring Street between Front Street and First Street.
- Limit backing from diagonal parking on Spring Street during ferry unloading.
- Install traffic lights on Spring Street.
- Provide staging area for bicycle tour groups to gather after departing the ferry.

4.4 Pedestrian Management in Friday Harbor

Once walk-on passengers are clear of the ferry terminal, they still need to be managed so that they do not interfere with the flow of vehicles leaving the ferry. The means by which this is achieved depends on how they get off the ferry and the vehicle route through town. Some of the ideas that have been considered include:

- Provide a boardwalk along the waterfront from the ferry landing to Spring Street Landing.
- Make Circle Park east of Front Street pedestrian-only.
- Improve pedestrian way-finding and signage.
- Provide a waterfront boardwalk from the Ferry Terminal to Circle Park.
- Add pedestrian bulbs at busy intersections.

Queuing of passengers waiting to board the ferry can also interfere with the efficient loading and unloading of vehicles. Because there is no single area where all of the waiting walk-on passengers can stage, they tend to wait at various points around the town and as they make their way to the ferry terminal, they cross paths with the vehicles, in and out of crosswalks. Large numbers of walk-on passengers generally do not depart Friday Harbor on the same sailings that bring walk-ons to Friday Harbor so the issues associated with arriving and departing walk-on passengers do not tend to compound each other.

Given current projections, a waiting area with capacity for 600 people will be required by 2020. A waiting area with this capacity would be approximately 5,000 square feet. Many of the options for reducing interactions between arriving pedestrians and vehicles would also help to reduce problems that occur during departures.

4.5 Ferry Operations

Options for changes in WSF operations could improve both unloading and loading efficiencies by altering the mix of vehicles carried, the number of terminals served by each run, the timing of vessel arrivals and departures, or the size of ferries used on the route.

The WSF Long-Range Strategic plan calls for changing the service paradigm from one of multiple routes with multiple stops to one with non-stop runs from the major islands to the mainland and an inter-island connector run. The new system will preclude the need to back vehicles onto the ferry and simplify queuing for the mainland run. Both of these impacts will reduce dwell times somewhat but additional changes will be needed to meet the stated goals.

Other option that have been suggested include:

- Avoid mid-day arrivals.
- Limit the times commercial vehicles can travel.
- Limit commercial vehicle sizes.
- Create a new terminal for commercial traffic such as Jackson Harbor.
- Use larger capacity ferries.
- Use smaller capacity ferries calling more frequently.
- Encourage walk-on passengers instead of vehicles.
- Improved onboard information.
    - First-time visitors with vehicles.
    - Pedestrian tourists.
    - Bicycle groups.
- Add a second slip.

5 CONCLUSIONS

The extensive study and analysis of traffic flows to and from the Friday Harbor Ferry Terminal have resulted in a number of good ideas to reduce dwell time and improve safety. In the near term, implementation of traffic flow and pedestrian separation options should focus on making changes to both terminal operations and traffic management in Friday Harbor to permit two lane unloading and keeping pedestrians separated from traffic throughout the downtown core. The time savings to be achieved will depend on the options selected. In the long term, a separate walk-on passenger loading facility will be needed to maintain or improve service levels.

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Appendix A

1998 MOU Recommendation Status

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Five Year Waterfront Intermodal Transportation Study Recommendations & 1998 MOU		Status	Cost ($1,000s) 1995 Dollars Low	1995 Dollars High	2006 Dollars[7] Low	2006 Dollars[7] High	Comments
	Washington State Ferries Responsibilities						
WSF1	Purchase and develop adequate vehicle staging areas		$ 4,500	$ 8,100	$ 6,464	$11,635	Not funded in current capital plan
WSF2	Investigate and define operating parameters of "just in time" loading		$ 30	$ 40	$ 43	$ 57	
WSF3	Develop "Kiss and Ride", public transportation and parking facility at the existing loading lanes		$ 900	$ 1,100	$ 1,293	$ 1,580	Not funded in current capital plan
WSF4	Open a second ferry loading lane	Complete	$ 800	$ 1,000	$ 1,149	$ 1,436	
WSF5	Construct adequate outdoor passenger routing and staging area to connect the ferry landing to Circle Park.		$ 700	$ 850	$ 1,006	$ 1,221	Not funded in current capital plan
WSF6	Surplus unused land				$ -	$ -	No land to surplus
WSF7	Work with the Town and County to fund personnel for traffic control (Annual Cost)	Complete	$ 12	$ 30	$ 17	$ 43	
	Port of Friday Harbor Responsibilities				$ -	$ -	
P1	Work with Town to insure ther is adequate access to the marina and adequate traffic flow on Front Street including a turn-around at the end of Front Stree and adequate emergency access	Complete	$ 175	$ 250	$ 251	$ 359	

[7] Cost estimates adjusted as per Consumer Price Index at ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt. 1995 Average CPI: 152.4; 3/06 CPI: 199.8

Five Year Waterfront Intermodal Transportation Study Recommendations & 1998 MOU		Status	Cost ($1,000s) 1995 Dollars Low	1995 Dollars High	2006 Dollars[7] Low	2006 Dollars[7] High	Comments
P2	Work with the Town to develop Front Street to a more pedestrian environment. Rebuild the sidewalk in front of Downriggers and make appropriate pedestrian improvements at Spring Street Landing.	Complete	$ 400	$ 500	$ 575	$ 718	
P3	Schedule no simultaneous unloading of passengers from passenger-only ferries and WS ferries	Complete	$ -	$ -	$ -	$ -	
P4	Limit passenger-only and excursion vessels to 550 feet of combined space at Spring Street Landing Breakwater and the Marina Breakwater	Complete	$ -	$ -	$ -	$ -	
P5	Limit passenger pick at Spring Street Landing to one twelve passenger van on Spring street Landing property (consistent with the August 1996 permit requirements for Substantial Development Permit) until Intermodal Transportation Plan Improvements are made.		$ -	$ -	$ -	$ -	May not be necessary, hasn't been assessed; shoreline permit required; kiss and ride may alleviate this.
	Town of Friday Harbor Responsibilities				$ -	$ -	
T1	Assist in enlarging Circle Park	Complete	$ 70	$ 90	$ 101	$ 129	
T2	Sign and re-route traffic on Front Street and East Street		$ 100	$ 150	$ 144	$ 215	Need preferred routing
T3	Work with the County and WS Ferries to fund personnel for traffic control (Annual Cost)	Complete	$ 20	$ 30	$ 29	$ 43	
T4	Create pedestrian "bulbs" at the intersection of Spring Street and First Street to ease pedestrian/vehicular interaction at this intersection.	Complete	$ 70	$ 90	$ 101	$ 129	

Five Year Waterfront Intermodal Transportation Study Recommendations & 1998 MOU		Status	Cost ($1,000s) 1995 Dollars Low	1995 Dollars High	2006 Dollars[7] Low	2006 Dollars[7] High	Comments
	San Juan County Responsibilities				$ -	$ -	
C1	Assist the town with the enlargement of Circle Park	Complete	$ 70	$ 90	$ 101	$ 129	
C2	Work with the town and WS Ferries to fund personnel for traffic control. (Annual Cost)	Complete	$ 20	$ 30	$ 29	$ 43	
	Joint Responsibilities				$ -	$ -	
J1	Adopt the Long Term Conceptual Plan as a planning tool.	Complete	$ -	$ -	$ -	$ -	
J2	Provide a preferred vehicular routing plan.		$ 10	$ 20	$ 14	$ 29	
J3	Assess the financial impacts to Friday Harbor of intermodal terminal siting within the town.	OBE	$ 30	$ 50	$ 43	$ 72	No longer interest in out-of-town terminal
J4	Meet every other year to consider and compare actual growth with planning predictions and development actions, reconsider the Long Term Conceptual Plan and determine whether additional development is needed.		$ -	$ -	$ -	$ -	Addressed in current work plan
J5	Create a Town, County, Port and WS Ferries committee, consisting of a representative from each group, responsible for inter-agency implementation of the five-year plan. This committee will assist in funding, qualitative design review, and coordination. (Annual cost)		$ 2	$ 6	$ 3	$ 9	Addressed in current work plan

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Appendix B

Transportation Improvement Options Matrix

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Issues	Solution Ideas	Comments	Source
Terminal Operations			
Vehicle unloading	Double-lane unloading	Bennett's plan	2/06 ITC
	Double-lane unloading	Other plans	1998 Plan
	Use of East Street as exclusive exit lane	Tried in the past, trucks unable to climb grade and conflicts with unloading traffic at East/First	2/06 ITC
	Use of East Street for non-truck ferry unloading with double -lane unloading		1998 Plan
	Use of east side of holding areas for new exit lanes	Proposed by Howard Rosenfeld	6/06 ITC
	Connect West St to Front St	Proposed by Rob DeGavre	6/06 ITC
Separating people from vehicles	Overhead passenger loading/unloading	Allows for simultaneous ped/veh loading and unloading; discharge north of ferry landing; discharge south of ferry landing; dual-discharge configuration	1998 Plan; ongoing
	Gate across Front Street	As tried in Summer 2006. Explore use of crossing gate (railroad type)	
	Waterfront boardwalk		1998 Plan
	Improve pedestrian walk-off wayfinding		1998 Plan; 2/06 ITC
Vehicle loading	Double-lane loading	Was successfully implemented in Summer 2006	1998 Plan
	Direct route from remote staging lots	Priority for ferry traffic at: "A" and First/Harrison; "A" and Nichols	1998 Plan
	Staging locations for bike tour groups	Look at alternate staging locations for bike tour groups. With the Memorial Park redesign, bicycle tour companies will not be able to stage in the roundabout.	2/06 ITC
	Explore new consolidated vehicle holding facility		1998 Plan
	Consider the Bow property for increased holding capacity	Property development permitting is underway	1998 Plan; 2/06 ITC

Issues	Solution Ideas	Comments	Source
	Reservation system	Extensive study for WSDOT published in 1991. Included group discussions, surveys, conceptual design of reservation system and assessment of potential impacts. The proposal was rejected by the island residents when presented in Spring 1991.	1991 Transpo Study
	"Just in time" loading concept	Pick up boarding coupons before the sailing at a new location with large holding capacity	1998 Plan
	"Virtual parking lot"concept ??	A radio-alert (similar to highway advisory radio) could be used to tell people when to queue for ferry	2/06 ITC
Kiss-and-Ride			1998 Plan
	Create new short term parking (auto/bus/taxis) for drop-offs and pick-ups at current primary staging area (Area "A")		1998 Plan
	Convert some downtown parking to Kiss-and-Ride		
	Consider property south of Lot C (Douglas property)		2/06 ITC
	Convert staging area "B" to Kiss & Ride (SE corner of "A" St. and Nichols St.)		
Traffic Management Through Town			
	Manual traffic control	Already implemented in the summer	
	Intersection improvements (including traffic signals, traffic circle at Argyle/Spring)		
	Improved signage & wayfinding		2/06 ITC
	Parallel parking on Spring		
	Eliminate parking on first block of Spring		2/06 ITC
	Limit backing from diagonal parking on Spring St. during ferry unloading		2/06 ITC
	Install traffic lights on Spring St.	Explore new types of traffic lights such as historic railroad crossing lights	2/06 ITC
	Other parking measures		

Issues	Solution Ideas	Comments	Source
Pedestrian Mobility Through Town			
	Improve pedestrian mobility & safety (Front and Spring Street primarily)		
	Circle Park		
	Pedestrian bulbs	At Spring/First and other intersections	
Route Operations/Scheduling			2/06 ITC
	Avoid midday arrivals, add more early and late night runs		2/06 ITC
	Commercial traffic allowed only on off-peak sailings or designate a commercial only sailing		2/06 ITC
	Limit commercial vehicles by size		
	Bring all commercial traffic to alternate location (such as Jackson Harbor)		County's suggestion
	Use larger capacity ferries		2/06 ITC
	Use smaller ferries w/more frequent sailings		2/06 ITC
	Encouraging walk-ons over vehicles		Ongoing
	Improved information onboard (for tourists, first time visitors, bicycle groups)		2/06 ITC
	Explore benefits and feasibility of adding a permanent second slip		

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